

REMARKS/ARGUMENTS

Claims 1-5 are pending herein. Claims 1-5 have been amended hereby. The specification has been amended by the substitute specification paragraphs submitted herewith, and the Abstract has been amended to correct minor matters of form. Applicants respectfully submit that no new matter has been added.

1. Examiner Kitov is thanked for courtesies extended to Applicants' representative during a telephonic interview on June 17, 2003, the substance of which is incorporated below.

2. The objection to claims 1 and 5 is noted, but deemed moot in view of rewritten claims 1 and 5 submitted above. Accordingly, Applicants respectfully request that the above objection be reconsidered and withdrawn.

3. Claim 1 was rejected under §103(a)[sic, §102(e)] over Matsunaga. During the telephonic interview, Examiner Kitov explained that he intended to base this rejection on §102(e) and that the reference to §103(a) was a typographical error. Examiner Kitov asked that Applicants' representative annotate the Office Action accordingly, and instructed Applicants' representative to address this rejection of claim 1 under §102(e). In view of the above, Applicants respectfully traverse the §102(e) rejection of claim 1 over Matsunaga.

Claim 1 recites an electrostatic chuck having a bonded structure comprising a ceramic electrostatic chuck member, a metal member, and a bonding layer. The ceramic electrostatic chuck member and the metal member are bonded with the bonding layer. The bonding layer comprises at least a first outermost bonding layer bonded to the ceramic electrostatic chuck member, a second outermost bonding layer bonded to the metal member, and a polyimide layer disposed between the first and second outermost bonding layers. Each of the first and second outermost bonding layers comprises a silicone layer.

In the Office Action, Examiner Kitov based the above rejection on Figs. 1 and 7 of Matsunaga. Fig. 1 of Matsunaga shows an electrostatic chuck device 10 that includes a ceramic layer 22 and a metal substrate 12 and a plurality of interposed layers. Adhesive layer 20, bonded to the ceramic layer 22 corresponds to a first outermost layer of the layered structure positioned between the ceramic layer and the metal substrate. The insulating elastic layer 14 corresponds to a second outermost layer bonded to the metal substrate 12. Insulating film layer 16 is a polyimide layer (see Matsunaga, Col. 9, line 11). Applicants respectfully submit, however, that neither the adhesive layer 20 nor the insulating elastic film 14 comprise a silicone layer, as recited in claim 1.

That is, the insulating elastic layer 14 is an adhesive including a rubber component and a phenol-type antioxidant. The various compositions for the insulating elastic layer 14 are recited at length in Col. 5 of Matsunaga. Applicants respectfully submit, however, that none of the numerous compositions recited for the insulating elastic layer 14 include silicone. Further, Col. 6, lines 51-55 of Matsunaga teach that the adhesive for the adhesive layer 20 can be the same material as that of the insulating elastic layer 14. Thus, Applicants respectfully submit that neither adhesive layer 20 nor insulating elastic layer 14 are a silicone layer, as recited in claim 1.

With respect to Fig. 7 of Matsunaga, the ceramic layer 22 is bonded to a first outermost layer (adhesive layer 20) and the metal substrate 12 is bonded to a second outermost layer (insulating adhesive layer 42). As described above, adhesive layer 20 does not comprise a silicone layer. Further, Col. 9, lines 12-15 of Matsunaga teach that thermosetting adhesives are preferably used as the insulating adhesive layer 42, such as epoxy resins, amine compounds, phenol resins and epoxy resin containing an adhesive, to name a few. Although Matsunaga discloses that silicone resin may be added to the insulating adhesive layer 42 "so as not to cause problems on tackiness, electricity insulating, or adhesion" (Col. 9, lines 16-18), Applicants respectfully submit that insulating adhesive layer 42 is still not a silicone layer, as recited in claim 1. Even if the PTO were to broadly interpret insulating adhesive layer 42 as

comprising silicone merely because silicone resin may be added to the main component forming the insulating adhesive 42, however, Applicants respectfully submit that the first outermost layer (adhesive layer 20) is still not silicone, such that the polyimide layer 16 of Matsunaga is not interposed between two outermost silicone layers, as recited in claim 1.

For at least the foregoing reasons, Applicants respectfully submit that claim 1 defines patentable subject matter over Matsunaga. Accordingly, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

4. Claims 2 and 4 were rejected under §103(a) over Matsunaga in view of *In re Aller*. Applicants respectfully traverse this rejection.

Claims 2 and 4 depend from independent claim 1, which is discussed in section 3 above. Applicants respectfully submit that since independent claim 1 defines patentable subject matter over Matsunaga, claims 2 and 4 also define patentable subject matter over the applied reference by virtue of their dependency from claim 1.

For at least the foregoing reasons, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

5. Claim 3 was rejected under §103(a) over Matsunaga in view of Parkhe. Applicants respectfully traverse this rejection.

Claim 3 depends from independent claim 1, which is discussed in section 3 above. Applicants respectfully submit that since claim 1 defines patentable subject matter over Matsunaga, claim 3 also defines patentable subject matter over the applied references by virtue of its dependency from claim 1.

For at least the foregoing reasons, Applicants respectfully request that the above rejection be reconsidered and withdrawn.

6. Claim 4 was rejected under §103(a) over Matsunaga in view of McMillin. Applicants respectfully traverse this rejection.

As mentioned in section 4 above, claim 4 depends from independent claim 1. Applicants respectfully submit that since claim 1 defines patentable subject matter over Matsunaga, claim 4 also defines patentable subject matter over the applied references by virtue of its dependency from claim 1.

For at least the foregoing reasons, Applicants respectfully request that the above rejection be reconsidered and withdrawn

7. Claim 5 was rejected under §103(a) over Matsunaga in view of *In re Aller* and further in view of Weldon. Applicants respectfully traverse this rejection.

Independent claim 5 recites a method for manufacturing an electrostatic chuck having a bonded structure comprising a ceramic electrostatic chuck member, a metal member and a bonding layer. The ceramic electrostatic chuck member and the metal member are bonded with the bonding layer. The bonding layer has at least a first outermost bonding layer bonded to the ceramic electrostatic chuck member, a second outermost bonding layer bonded to the metal member, and a polyimide layer disposed between the first and second outermost bonding layers. The first and second outermost bonding layers each comprise a silicone layer. The method comprises the steps of preparing a sheet comprising at least the first outermost layer, the second outermost layer and an intermediate layer disposed between the first and second outermost layers. The intermediate layer comprises the polyimide layer. The method also comprises the step of sandwiching the sheet between the ceramic electrostatic chuck member and the metal member, and a step of vacuum packing the ceramic electrostatic chuck member, sandwiched sheet, and the metal member into a vacuum-packing bag. Further, the method includes a step of heating the thus vacuum-packed ceramic electrostatic chuck member, sandwiched sheet and metal member under isotropic pressurization to bond them firmly.

As mentioned above with respect to claim 1, Matsunaga does not disclose or suggest that any of the outermost bonding layers of the layered structure interposed

between the ceramic layer 22 and the metal substrate 12 comprise a silicone layer, as recited in claim 1. This limitation is also recited in independent claim 5.

Accordingly, Applicants respectfully submit that independent claim 5 defines patentable subject matter over Matsunaga for the same reasons as described above with respect to independent claim 1. Applicants respectfully submit that the secondary and tertiary references do not overcome the deficiencies of the primary reference.

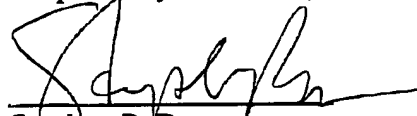
For at least the foregoing reasons, Applicants respectfully submit all claims pending herein define patentable subject matter over the art of record. Accordingly, Applicants respectfully request that the above rejection be reconsidered and withdrawn, and that a Notice of Allowance be issued for this application in due course.

If Examiner Kitov believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, he is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

September 4, 2003

Respectfully submitted,



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